

warnings were issued for the cranberry marshes of Wisconsin on the 1st, and 10th to 13th, and also for the northern portion of the district on the 20th. The warnings were timely and accurate, and no frost occurred without warnings.—*H. J. Cox, Professor and District Forecaster.*

DENVER FORECAST DISTRICT.

Over the greater portion of the Rocky Mountain districts the month was colder than usual, with several prolonged periods of low temperature. No special warnings were issued or needed. Owing to a rapid melting of snow near the Continental Divide the Grand River and streams rising in the San Juan Mountains, in the southwestern part of Colorado, were at flood stage during a part of the second decade of the month. No great damage resulted.—*F. H. Brandenburg, District Forecaster.*

SAN FRANCISCO FORECAST DISTRICT.

The month was unusually rainy. In the last fifty-seven years the rainfall in June in San Francisco has exceeded that of the present season only four times. On the 2d southeast storm warnings were displayed along the coast from Fort Harford north. This is the first time in the knowledge of the observer that warnings have been displayed in June. Rain fell generally in northern California, with high southerly winds. Throughout the month there was a tendency for north coast lows to extend southeast over Nevada, with a circulation more or less sluggish. The north Pacific seasonal high seems to have extended but little east of the coast line and apparently retreated somewhat west of its usual position. An excellent illustration of the result of such a pressure distribution is shown on June 10 and 11, and again on June 14 and 15. The month was singularly free from intense or prolonged hot spells.—*A. G. McAdie, Professor and District Forecaster.*

PORTLAND, OREG., FORECAST DISTRICT.

The month was unusually wet and the temperature averaged below the normal. Storm warnings ordered on the 3d and 11th were fully justified. Several light frosts occurred east of the Cascade Mountains for which, as a rule, timely warn-

ings were issued. The Columbia River rose slowly during the entire month, but did not reach a flood stage at any point in this district.—*E. A. Beals, District Forecaster.*

RIVERS AND FLOODS.

There were no high waters of great consequence during the month in the rivers on which river and flood service is maintained. The heavy rains of the early portion of the month in eastern Kansas, southwestern Missouri, and Arkansas caused flood stages in a considerable portion of the Neosho River, and comparatively high stages in the lower Arkansas River. The Missouri River was quite high from Bismarck southward, but did not reach flood stages. The crest of the rise passed Wolfpoint, Mont., on the 9th, Bismarck on the 11th, Sioux City on the 16th, Omaha on the 18th, Kansas City on the 21st, and Hermann, Mo., on the 24th, showing at St. Louis on the Mississippi River on the 25th. In the Mississippi River the stages were about normal for the season.

There was a sharp rise in the Brazos River of Texas from the 1st to the 9th, but the crest stages were from 4 to 17 feet below the flood stages. The Trinity River was also high at the same time, and the stages varied from 5 to 14 feet above the flood stages, except over the extreme lower portion of the river. Warnings and advices were issued for both rivers, beginning on May 31.

The Columbia River fell steadily throughout the month.

The highest and lowest water, mean stage, and monthly range at 285 river stations are given in Table VI. Hydrographs for typical points on seven principal rivers are shown on Chart I. The stations selected for charting are Keokuk, St. Louis, Memphis, Vicksburg, and New Orleans, on the Mississippi; Cincinnati and Cairo, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.—*H. C. Frankenfield, Professor of Meteorology.*

NOTE.—The term, "danger line", will no longer be used in designating the overflow stages of rivers. As a substitute the words "flood stage" will be used, the term meaning the lowest stage of water at which overflow will begin.

THE WEATHER OF THE MONTH.

By Mr. P. C. DAY, Assistant Chief, Division of Meteorological Records.

PRESSURE.

The distribution of mean atmospheric pressure is graphically shown on Chart VI, and the average values and departures from normal are shown in Tables I and V.

The pressure during June, 1906, was low over all parts of the United States and Canada, except over a small area embracing the northern Rocky Mountain districts and extending southwest over Nevada and California and west over Oregon and Washington to the Cascade Mountains, where the pressure was slightly above normal.

The high pressure area with averages above 30.00 inches normally overlying the South Atlantic and East Gulf States and extending eastward into the Atlantic, was much reduced in intensity during the current month, falling considerably below 30.00 inches.

Pressure much below the normal prevailed throughout the Lake region and extended far to the northwestward over Manitoba, Alberta, and the Saskatchewan districts of Canada. At Prince Albert, Saskatchewan, the pressure averaged 0.15 inch below the normal.

Over the Pacific coast and southern Rocky Mountain districts the pressure distribution was not materially different from the average.

The normal change in pressure from May to June shows a large area from western Texas northeastward to the Lakes and eastward to the Atlantic, with a considerable increase in pressure. North and west of this region there is a general decrease in pressure from May.

During the current month nearly all sections showed marked decreases in pressure from the values for May, 1906, and especially from the Gulf coast northward to the Lakes and northwestward over Canada. Over a small region embracing Oregon and Washington, and extending eastward as far as Colorado, the pressure for June was slightly above that for the preceding month. The marked decrease of pressure northward brought nearly all districts east of the Rocky Mountains under the influence of southerly winds and confined the storm tracks, as a rule, well to the north.

TEMPERATURE.

The mean temperature for the month over the greater portion of the interior of the United States was well below the average. Over the greater part of the western plains and mountain region and extending almost to the Pacific coast, the temperature averaged from 2° to 4° below normal. Over the Great Valley of California temperatures were again well below the average, Red Bluff, Cal., showing an average deficiency of more than 5° daily. Over the Lake region, Atlantic and Gulf States, the Rio Grande Valley, and the south Pacific coast the temperature was generally in excess of the average. Maximum temperatures, as a rule, were not excessive, but few points showing as high as 100°, except over western Texas, the southern parts of New Mexico and Arizona, and the interior of southern California. Maximum temperatures of 110° were recorded at a few points in the desert regions of southwestern Arizona and southeastern California. Temperatures below freezing were not recorded, except over extreme northern